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This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s quaternary ammonium salt
    145576 QUATERNARY
    442637 AMMONIUM
    880153 SALT
L1    10521 QUATERNARY AMMONIUM SALT
        (QUATERNARY(W)AMMONIUM(W)SALT)

=> s l1 and hydrogen sulfate salt
    1118566 HYDROGEN
    580124 SULFATE
    880153 SALT
    53 HYDROGEN SULFATE SALT
        (HYDROGEN(W)SULFATE(W)SALT)
L2    0 L1 AND HYDROGEN SULFATE SALT

=> s l1 and sodium hydrogen sulfate
    1259506 SODIUM
    1118566 HYDROGEN
    580124 SULFATE
    707 SODIUM HYDROGEN SULFATE
        (SODIUM(W)HYDROGEN(W)SULFATE)
L3    2 L1 AND SODIUM HYDROGEN SULFATE

=> d 1-2 bib abs
```

L3 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 2005:566587 CAPLUS
 DN 143:59342
 TI Novel multi-component oxidation catalyst and production method of epoxy compounds
 IN Hori, Yoji; Nakamura, Atsushi; Sawaki, Tomoya; Tanaka, Shigeru
 PA Takasago Perfumery Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005169363	A	20050630	JP 2003-417188	20031215
	WO 2005058494	A1	20050630	WO 2004-JP17380	20041124
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	CN 1874843	A	20061206	CN 2004-80032584	20041124
	US 20070117993	A1	20070524	US 2006-581537	20060601
	ES 2294961	A1	20080401	ES 2006-50040	20060614
	ES 2294961	B1	20090216		
	IN 2006CN02542	A	20070608	IN 2006-CN2542	20060712
PRAI	JP 2003-417188	A	20031215		
	WO 2004-JP17380	W	20041124		

OS CASREACT 143:59342
 AB The invention refers to a novel multi-component oxidation catalyst for epoxidn. of olefins comprising a W compound, a quaternary ammonium salt, a phosphate compound and/or borate compound, and hydrogen sulfate.

L3 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 2003:669541 CAPLUS
 DN 139:166233
 TI Composition and preparation process of a liquid toilet bowl cleaner
 IN Cheng, Weihong; Zhang, Lei; Zhou, Mingfang
 PA Shanghai White Cat Co., Ltd., Peop. Rep. China
 SO Faming Zhuanli Shengqing Gongkai Shuomingshu, 5 pp.
 CODEN: CNXXEV

DT Patent
 LA Chinese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1354243	A	20020619	CN 2000-127487	20001122
PRAI	CN 2000-127487		20001122		

AB The liquid toilet bowl cleaner effective in removing stains and odors, is prepared from an acidic descaling agent, a fragrance, a colorant and a surfactant system containing $\leq 10\%$ of a mixture of one or more types of polyoxyethylene nonionic surfactant, $\leq 20\%$ of a mixture of one or more types of quaternary ammonium salt

cationic surfactant or amine oxide nonionic surfactant, and $\leq 15\%$ of a mixture of one or more types of zwitterionic surfactant, and an acid such as HCl.

=> s trioctylmethylammonium hydrogen sulfate

881 TRIOCTYLMETHYLAMMONIUM
1118566 HYDROGEN
580124 SULFATE

L4 4 TRIOCTYLMETHYLAMMONIUM HYDROGEN SULFATE
(TRIOCTYLMETHYLAMMONIUM(W)HYDROGEN(W)SULFATE)

=> d 1-4 bib abs

L4 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2008:154303 CAPLUS

DN 148:215842

TI Manufacture of epoxidized polymers

IN Sato, Kazuhiko; Kon, Yoshihiro; Yamamoto, Momoko; Hoshino, Yukihiisa; Ooka, Susumu; Oda, Takeshi

PA National Institute of Advanced Industrial Science & Technology, Japan; Denki Kagaku Kogyo Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 16pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2008024731	A	20080207	JP 2006-195179	20060718

PRAI JP 2006-195179

AB Polymers having C:C bonds are oxidized by the use of H₂O₂ as an oxidizing agent and catalysts consisting of Group VI oxide salts, phosphonic acids, and surfactants for introducing epoxy groups. Thus, 150 g styrene-butadiene block copolymer (Clearen 760M; 13% 1,2-configuration) was dissolved in PhMe, mixed with a catalyst prepared by stirring Na tungstate 1.17, aminomethylphosphonic acid 0.39, trioctylmethylammonium hydrogen sulfate 1.65, and 30% H₂O₂ solution 96 g, stirred at 70° for 2 h, cooled, separated from the aqueous phase, and washed to give a product showing epoxidn. degree 9.3%, no change in 1,2-vinyl structure, and suppressed mol. chain cleavage or discoloration.

L4 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:1303866 CAPLUS

DN 148:144892

TI Kinetics of Citral Hydrogenation by Supported Ionic Liquid Catalysts (SILCA) for Fine Chemicals

AU Virtanen, Pasi; Mikkola, Jyri-Pekka; Salmi, Tapio

CS Laboratory of Industrial Chemistry, Process Chemistry Centre, Abo Akademi, Turku/Abo, FI-20500, Finland

SO Industrial & Engineering Chemistry Research (2007), 46(26), 9022-9031

CODEN: IECRED; ISSN: 0888-5885

PB American Chemical Society

DT Journal

LA English

AB The use of ionic liqs. in catalysis is attracting interesting attention in chemical engineering. Supported ionic liquid catalyst (SILCA) compds. consist of immobilized catalytic species (e.g., transition metal particles residing in an ionic liquid layer immobilized on a solid support). In this work, the kinetics of SILCA compds. has been studied in detail and a

mechanistic kinetic model, which describes the differences in selectivity and activity of the catalysts that contain different ionic liqs., has been developed.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:654257 CAPLUS

DN 147:237131

TI The effect of ionic liquid in supported ionic liquid catalysts (SILCA) in the hydrogenation of α,β -unsaturated aldehydes

AU Virtanen, Pasi; Karhu, Hannu; Kordas, Krisztian; Mikkola, Jyri-Pekka

CS Laboratory of Industrial Chemistry, Process Chemistry Centre, Abo Akademi University, Turku, FIN-20500, Finland

SO Chemical Engineering Science (2007), 62(14), 3660-3671

CODEN: CESCAC; ISSN: 0009-2509

PB Elsevier Ltd.

DT Journal

LA English

OS CASREACT 147:237131

AB The supported ionic liquid catalyst (SILCA) consists of transition metal particles, Pd(acac)₂, residing in an ionic liquid layer on activated carbon as solid support. The effect of different ionic liqs. in SILCAs on activity and selectivity in selective hydrogenations (citril and cinnamaldehyde), was studied and the catalysts were characterized in detail. The ionic liqs. used include 1-butyl-3-methylimidazolium tetrafluoroborate [BMIM-BF₄], 1-butyl-3-methylimidazolium hexafluorophosphate [BMIM-PF₆], N-butyl-4-methylpyridinium tetrafluoroborate [NB4MPy-BF₄], trioctylmethylammonium hexafluorophosphate [A336-PF₆], and trioctylmethylammonium hydrogen sulfate [A336-HSO₄].

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2004:159359 CAPLUS

DN 140:199192

TI Preparation of epoxy compounds from olefins using halogen-free catalysts and solvents

IN Hirota, Masashi; Hagiya, Hirotoshi

PA Sumitomo Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2004059573	A	20040226	JP 2003-113777	20030418
PRAI	JP 2002-161145	A	20020603		

AB Epoxy compds. are prepared by oxidation of olefins by H₂O₂ in PhMe in the presence of W oxides (prepared by treating W compds. with H₂O₂), quaternary ammonium hydrogen sulfates, and phosphoric acids. 1-Octene was oxidized by H₂O₂ in PhMe in the presence of oxidized W, Na₂HPO₄, NaOH, and trioctylmethylammonium hydrogen sulfate at 90° for 4 h to give 95% 1,2-epoxyoctane.

=> s trioctylmethylammonium hydrogen sulfate salt
881 TRIOCTYLMETHYLAMMONIUM
1118566 HYDROGEN

580124 SULFATE
 880153 SALT
 L5 0 TRIOCTYLMETHYLAMMONIUM HYDROGEN SULFATE SALT
 (TRIOCTYLMETHYLAMMONIUM(W)HYDROGEN(W)SULFATE(W)SALT)

=> s trioctylmethylammonium chloride
 881 TRIOCTYLMETHYLAMMONIUM
 1258356 CHLORIDE
 L6 692 TRIOCTYLMETHYLAMMONIUM CHLORIDE
 (TRIOCTYLMETHYLAMMONIUM(W)CHLORIDE)

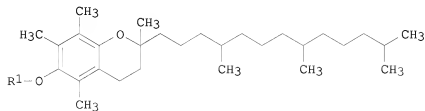
=> s 16 and sodium hydrogen sulfate
 1259506 SODIUM
 1118566 HYDROGEN
 580124 SULFATE
 707 SODIUM HYDROGEN SULFATE
 (SODIUM(W)HYDROGEN(W)SULFATE)
 L7 0 L6 AND SODIUM HYDROGEN SULFATE

=> s 16 and sulfuric acid
 170937 SULFURIC
 4782518 ACID
 166143 SULFURIC ACID
 (SULFURIC(W)ACID)
 L8 14 L6 AND SULFURIC ACID

=> d 1-14 bib abs

L8 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 2008:699409 CAPLUS
 DN 149:32514
 TI Preparation of water-soluble stable tocopheryl glycosides
 IN Ishimaru, Katsutoshi; Tokushige, Tadafumi; Takekawa, Akihiro
 PA Api Corporation, Japan
 SO Jpn. Kokai Tokkyo Koho, 16pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----		-----	-----	-----
PI	JP 2008133275	A	20080612	JP 2007-285522	20071101
PRAI	JP 2006-298300	A	20061101		
GI					



I

AB Title compds. I [R1 = residue of glucose, galactose, mannose, arabinose, xylose, rhamnose, fucose, maltose, β (1,4)-galactosylmaltose,

maltotriose, $\beta(1,4)$ -galactosylmaltotriose, maltotetraose, $\beta(1,4)$ -galactosylmaltotetraose, maltopentaose, $\beta(1,4)$ -galactosylmaltopentaose, maltohexaose, etc.] are prepared by glycosidation of peracetylated mono- or oligosaccharides with tocopherol in the presence of main catalysts and their aids, and optionally dissolved in mixts. of aqueous AcOEt and/or aqueous EtOH (as good solvents) and crystallization from mixts. of the good solvents and Me₂CO and/or isopropanol (as poor solvents). Thus, $\beta(1,4)$ -galactosylmaltose was acetylated, glycosidated with dl- α -tocopherol in the presence of methanesulfonic acid and tetrabutylammonium bisulfate to give peracetylated glycoside. The product was deprotected with MeONa/MeOH, dissolved in aqueous MeCN, and crystallized from aqueous EtOH to afford I [R₁ = $\beta(1,4)$ -galactosylmaltose residue], 1.2 g of which was soluble in 100 mL water.

L8 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2007:1214334 CAPLUS

DN 149:19821

TI Effect of the nature of the counterions of N-alkyl quaternary ammonium salts on inhibition of the corrosion process

AU Fuchs-Godec, Regina

CS Fakulteta za kemijo in kemijsko tehnologijo Maribor, Maribor, Slovenia

SO Acta Chimica Slovenica (2007), 54(3), 492-502

CODEN: ACSLE7; ISSN: 1318-0207

PB Slovenian Chemical Society

DT Journal

LA English

AB Electrochem. measurements were performed to investigate the effectiveness of cationic surfactants of the N-alkyl quaternary ammonium salt type with different counterions and different chain lengths, as corrosion inhibitors for ferritic stainless steel type X4Cr13 in 2 M H₂SO₄ solution. Two of them were single-chained surfactants and the other two were composed of three C₈ alkyl-chains. The chosen cationic surfactants were myristyltrimethylammonium chloride (MTACl), myristyltrimethylammonium bromide (MTABr), trioctylmethylammonium chloride (TOMACl) and trioctylmethylammonium bromide (TOMABr). Potentiodynamic polarisation measurements showed that these surfactants hinder both anodic and cathodic processes, i.e. they act as mixed-type inhibitors. It was found that the adsorption of the n-alkyl ammonium ion in 2 M H₂SO₄ solution is in accordance with the Langmuir adsorption isotherm. Plots of log [0/(1- θ)] vs. log cinch yielded straight lines with a slope which drastically changed at the CMC values of used surfactants. The plot of log θ vs. log cinh confirms 'the four-region' reverse orientation model of adsorption, suggested by Somasundaran and Fuerstenau. In region IV, where the formation of a multilayer is in progress, it is supposed that two different multilayers formed on metal surface in the case of TOMABr and MTABr. The influence of added -CH₂ groups (chain length) on the inhibition efficiency is greater than the influence of different counterions.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2006:438375 CAPLUS

DN 145:296586

TI The adsorption, CMC determination and corrosion inhibition of some N-alkyl quaternary ammonium salts on carbon steel surface in 2M H₂SO₄

AU Fuchs-Godec, R.

CS Faculty of Chemistry and Chemical Engineering, University of Maribor, Smetanova 17, Maribor, 2000, Slovenia

SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (2006),

280(1-3), 130-139
CODEN: CPEAEH; ISSN: 0927-7757
Elsevier B.V.

PB
DT
LA
AB

Electrochem. measurements were performed to investigate the effectiveness of cationic surfactants of the N-alkyl quaternary ammonium salt type, i.e. myristyltrimethylammonium chloride (MTACl), cetyltrimethylbenzylammonium chloride (CDBACl), and triethylmethylammonium chloride (TOMACl), as corrosion inhibitors for type X4Cr13 ferritic stainless steel in 2 M H₂SO₄ solution. Potentiodynamic polarization measurements showed that these surfactants hinder both anodic and cathodic processes, i.e. act as mixed-type inhibitors. It was found that the adsorption of the N-alkyl ammonium ion in 2 M H₂SO₄ solution follows the Langmuir adsorption isotherm. Plots of $\log [0/(1 - \theta)]$ vs. $\log c$ inh yielded straight lines with a slope, which changed drastically at the critical micelle concentration

(CMC)

of the surfactants studied. Accordingly, the CMC could be accurately determined from these measurements. The calculated values of the free energy

of

adsorption AG ads are, in cases when the charge on the metal surface is neg. with respect to the PZC, relatively high what is characteristically for the chemisorption. On the other hand, for pos. metal surfaces it is assumed that SO₄²⁻ anions are adsorbed first, so the cationic species would be limited by the surface concentration of anions. Accordingly AG ads values were lower in this case and the adsorption is due to merely electrostatic attraction, which is characteristically of physisorption.

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2006:171728 CAPLUS

DN 145:509074

TI The corrosion inhibition of X4Cr13 SS in 2,0 M H₂SO₄ by some cationic surfactants in the series of N-alkyl quaternary ammonium salts

AU Fuchs-Godec, R.

CS Fakulteta za Kemijo in Kemijsko Tehnologijo Maribor, Maribor, Slovenia

SO Slovenski Kemijski Dnevi, 11th, Maribor, Slovenia, Sept. 22-23, 2005

(2005), F1/1-F1/9 Publisher: Univerza v Mariboru, Fakulteta za Kemijo in Kemijsko Tehnologijo, Maribor, Slovenia.

CODEN: 69HTUD; ISBN: 86-435-0722-9

DT Conference; (computer optical disk)

LA Slovenian

AB Electrochem. measurements were performed to investigate the effectiveness of the cationic surfactants of the type of N-alkyl quaternary ammonium salts; Myristyltrimethylammonium chloride (MTACl), Cetyltrimethylbenzylammonium chloride (CDBACl) and Triethylmethylammonium chloride (TOMACl) as corrosion inhibitors for ferritic stainless steel type X4Cr13 in 2 M H₂SO₄ solution. Potentiodynamic polarization measurements show that these surfactants hinder both anodic and cathodic processes, i.e. act as mixed-type inhibitors. The adsorption of the n-alkyl ammonium ion in 2 M H₂SO₄ solution is accorded with Langmuir adsorption isotherm. Plots of $\log [0/(1 - \theta)]$ vs. $\log c$ inh yielded straight lines with a slope which drastically change at CMCs of used surfactants. From all measurements performed, high inhibition efficiencies are observed when concentration was exceed

their CMCs. When single-chained surfactants were used (C14 chain - MTACl and C16 chain - CDBACl) the inhibition efficiency also increases with the number of carbon atoms in the chain length. Triethylmethylammonium

chloride (TOMACl) is composed from three C8 alkyl-chains and the highest inhibition efficiency was provided.

L8 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN
 AN 2006:53940 CAPLUS
 DN 144:128657
 TI Preparation of pinacol from tetramethylethylene
 IN Su, Wenzhong; Zhang, Suizhi; Shi, Zuowu
 PA Dalian Lianhua Chiral Chemical Engineering and Technology Co., Ltd., Peop.
 Rep. China
 SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 9 pp.
 CODEN: CNXXEV
 DT Patent
 LA Chinese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CN 1634822	A	20050706	CN 2004-10082734	20041101
	CN 1281565	C	20061025		
PRAI	CN 2004-10082734		20041101		

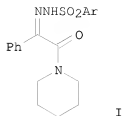
OS CASREACT 144:128657
 AB The title method comprises reacting tetramethylethylene and hydrogen peroxide in acid solution (pH = 0-3.0) at 40-70° while stirring at 200-800 r/m in the presence of catalyst of tungsten or molybdenum complexes, cooling and crystallizing. The catalyst comprises sodium tungstate, or sodium molybdate, and quaternary ammonium salt phase transfer catalyst such as trioctylmethylammonium chloride.

L8 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN
 AN 2004:739976 CAPLUS
 DN 141:243346
 TI Preparation of threo-methylphenidate hydrochloride via treatment of 1-(phenylglyoxylyl)piperidine arenesulfonyl hydrazones with inorganic base to give (R*,R*)-enriched 7-phenyl-1-azabicyclo[4.2.0]octan-8-one.
 IN Gutman, Arie; Zaltsman, Igor; Shalimov, Anton; Sotrihin, Maxim; Nisnevich, Gennady
 PA ISP Investments Inc., USA
 SO U.S. Pat. Appl. Publ., 7 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040176412	A1	20040909	US 2004-793600	20040304
	US 7002016	B2	20060221		
	WO 2004080583	A2	20040923	WO 2004-US6567	20040304
	WO 2004080583	A3	20050324		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2003-452724P P 20030307
 OS CASREACT 141:243346; MARPAT 141:243346



- AB Treatment of 1-(phenylglyoxylyl)piperidine arenesulfonylhydrazones (I; Ar = aryl which may be substituted by alkyl, halo, NO₂) with inorg. base in the presence of H₂O-immiscible organic solvent and phase transfer catalyst gave (R*,R*)-enriched 7-phenyl-1-azabicyclo[4.2.0]octan-8-one. Preferably, the threo-methylphenidate hydrochloride produced by the process of the present invention contains ≤1% erythro-isomer. Thus, 1-(phenylglyoxylyl)piperidine p-toluenesulfonylhydrazone (preparation given), 50% aqueous NaOH, and trioctylmethylammonium chloride were refluxed 6.5 h in PhMe to give 100% 7-phenyl-1-azabicyclo[4.2.0]octan-8-one (R*,R*/S*,R* = 3.3:1). This in refluxing MeOH was treated with HCl gas to give 76.9% methylphenidate (threo/erythro = 3.5:1). The latter was added to a mixture prepared from AcCl in MeOH at 0° followed by reflux, treatment with MeOCMe₃, stirring for 2 h at 20-30° and for 2 h at -5° to 10°, and filtration of the precipitate to give 58.2% threo-methylphenidate in 98.8% purity.
- RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT
- L8 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2004:164934 CAPLUS
DN 141:74584
TI Solvent extraction of Cr(III) from alkaline media with quaternary ammonium compounds. Part II
AU Wionczyk, Barbara; Apostoluk, Wieslaw
CS Institute of Leather Industry, Lodz, 91-462, Pol.
SO Hydrometallurgy (2004), 72(3-4), 195-203
CODEN: HYDRDA; ISSN: 0304-386X
PB Elsevier Science B.V.
DT Journal
LA English
AB The extraction system, Cr(III)-NaOH-quaternary ammonium salt-hydrocarbon diluent-1-decanol, has been studied with respect to the loading capacity of the organic phase, volume ratio of phases, and effect of concentration of some electrolytes in the aqueous phase. Trioctylmethylammonium chloride appears to be a much better extractant of Cr(III) from alkaline media than benzyldodecyldimethylammonium bromide because the loading capacity of organic phase with the former is a factor of >4 higher. The yield of Cr(III) extraction depends on the ionic strength of the aqueous phase and under optimum conditions does not depend on volume ratio of phases ranging from 0.1 to 1.0. The separation coefficient of Cr(III) and Al(III) reveal that these metals can be efficiently separated. Cr(III) is easily stripped from the organic phase with sulfuric acid solns., and the organic

phase regenerated with sulfuric acid can be successfully used for further Cr(III) extraction with the yield exceeding 99%. Under optimum conditions, the recovery of Cr(III) with either ammonium salt from real industrial spent solns. is practically complete.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN

AN 2003:532703 CAPLUS

DN 139:101833

TI Process for production of aromatic oligomer comprising separating water layer and organic layer by adding surfactant and alkali

IN Senzaki, Toshihide; Imamura, Takahiro; Horibe, Kazuyoshi; Yoshida, Tomoaki; Katayama, Atsuhiko; Wada, Yasuo; Noguchi, Katsuhide

PA Nippon Steel Chemical Co., Ltd., Japan

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003055927	A1	20030710	WO 2002-JP13632	20021226
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2468979	A1	20030710	CA 2002-2468979	20021226
AU 2002361100	A1	20030715	AU 2002-361100	20021226
CN 1608088	A	20050420	CN 2002-826155	20021226
CN 1263780	C	20060712		
JP 4181996	B2	20081119	JP 2003-556455	20021226
US 20040266976	A1	20041230	US 2004-496139	20040520
US 7049389	B2	20060523		
PRAI JP 2001-396952	A	20011227		
WO 2002-JP13632	W	20021226		

AB The process comprises reacting an aromatic compound (e.g., naphthalene) with formaldehyde (e.g., paraformaldehyde) in the presence of an acid catalyst (e.g., sulfuric acid) to form a reaction liquid of an acid catalyst-containing aqueous layer and an aromatic oligomer-containing organic layer;

adding an effective amount of a surfactant selected from nonionic surfactants and cationic surfactants [e.g., Demulfer D 989 (nonionic surfactant)] and an alkali (e.g., NaOH) in such an amount as to neutralize 1-70% of the acid catalyst to the reaction liquid, separating the phases and recovering the oligomer.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN

AN 2000:767020 CAPLUS

DN 133:352874

TI Determination of indium and tellurium in geological reference materials by solvent extraction and graphite-furnace AAS

AU Terashima, Shigeru

CS Geological Survey of Japan, Higashi, Tsukuba-shi, Ibaraki, 305-8567, Japan
SO Bunseki Kagaku (2000), 49(10), 787-790
CODEN: BNSKAK; ISSN: 0525-1931

PB Nippon Bunseki Kagakkai

DT Journal

LA Japanese

AB A simple and sensitive method for the determination of In and Te in geol. reference

materials is presented. A sample of 0.01 to 1.0 g, containing less than 50 µg of Bi, Pb, or Sn, and 100 µg of Cu, was decomposed with aqua regia and HF. The contents were then evaporated to dryness. The residue was dissolved by heating with diluted HCl, and centrifuged to remove any undissolved material. After the addition of sulfuric acid, potassium iodide-ascorbic acid, and palladium solns. to the supernatant, In and Te were extracted into 0.5.apprx.1.0 mL of MIBK containing 5% trioctylmethylammonium chloride, and determined by graphite-furnace AAS. Although interference from most elements could be minimized by the addition of palladium as a matrix modifier, a large amount of Bi, Pb, Sn and Cu suppressed the In and/or Te absorbance. The relative standard deviation was smaller than 10% for a content larger than 3 ng of In and Te, and the limit of detection for both elements was 0.2 ng/g for a 1 g sample. This method was successfully applied to the determination of In and

Te in various geol. reference materials.

L8 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1997:542820 CAPLUS

DN 127:205340

OREF 127:39919a,39922a

TI Preparation of 4,4'-bis(hydroxymethyl)diphenyl from bis(chloromethyl)diphenyl

IN Taniguchi, Hisaji; Nomura, Eisaku; Uchida, Masahiro; Nasaka, Norimitsu; Doi, Atsushi; Kawashima, Setsuo

PA Wakayama Prefecture, Japan; Nankai Kagaku Kogyo K. K.

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09208510	A	19970812	JP 1996-13472	19960130
PRAI	JP 1996-13472		19960130		

OS CASREACT 127:205340

AB 4,4'-Bis(hydroxymethyl)diphenyl (I), useful as a material for engineering plastics and liquid crystals is prepared by hydrolysis of 4,4'-bis(chloromethyl)diphenyl (II) in hydrophilic organic solvents in the presence of alkalis. I is also prepared by treatment of II with organic acid salts in hydrophilic organic solvents, followed by hydrolysis of the resulting esters in the presence of alkalis or acids or by esterification in hydrophobic solvents in the presence of phase-transfer catalysts, followed by hydrolysis in the presence of alkalis or acids. A mixture of II, NaOH, H₂O, and DMF was stirred at 80-85° for 1-2 h to give 95% I.

L8 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1997:482484 CAPLUS

DN 127:178095

OREF 127:34487a,34490a

TI Liquid membrane transport of tungsten(VI) by quaternary ammonium salt

AU Mahmoud, Mohamed H. H.; Nakamura, Shigeto; Akiba, Kenichi

CS Institute for Advanced Materials Processing, Tohoku University, Sendai,
980-77, Japan
SO Solvent Extraction Research and Development, Japan (1997), 4, 23-34
CODEN: SERDEK; ISSN: 1341-7215
PB Japanese Association of Solvent Extraction
DT Journal
LA English
AB The extraction of tungsten(VI) with trioctylmethylammonium
chloride (TOMAC) was investigated from acidic and alkaline solns. The
distribution ratio (D) was high at low acidity and decreased with
increasing acid concentration in the order of $H_2SO_4 > HCl > HNO_3 > HClO_4$.
Tungsten(VI) was also extracted from dilute alkaline solns. via an anion

exchange
reaction of WO_4^{2-} with trioctylmethylammonium hydroxide, and the extraction was
depressed at higher NaOH concentration. The transport behavior of tungsten(VI)
has been studied through a supported liquid membrane (SLM) containing TOMAC as
the mobile carrier. Tungsten(VI) was transported from a weakly acidic
feed solution across the TOMAC-SLM into acids of higher concns. Transport
also took place from dilute alkaline solution into 1 M (1 M = 1 mol dm⁻³)

NaOH. An
increase in TOMAC concentration in the SLM improved the transport and a high
recovery of tungsten(VI) (98%) was achieved. Tungsten(VI) was efficiently
concentrated in the product side with high concentration factor.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN
AN 1996:601028 CAPLUS
DN 125:227070

OREF 125:42353a,42356a
TI Transport of molybdenum(VI) through a supported liquid membrane containing
trioctylmethylammonium chloride

AU Mahmoud, Mohamed H. H.; Nakamura, Shigeto; Akiba, Kenichi
CS Institute Advanced Materials Processing, Tohoku Univ., Senda, 980-7, Japan
SO Solvent Extraction Research and Development, Japan (1996), 3, 187-200
CODEN: SERDEK; ISSN: 1341-7215

PB Japanese Association of Solvent Extraction
DT Journal
LA English

AB The extraction of Mo(VI) was investigated with 0.1 M
trioctylmethylammonium chloride (TOMAC)-10% 1-octanol in
kerosene from different acidic media. The distribution ratio (D) of
Mo(VI) at low acidity decreased with increasing acid concentration in the
order,
 $H_2SO_4 > HCl > HNO_3 > HClO_4$. The D value steeply increased with increasing
HCl concentration above 1 M. The extraction of Mo(VI) from HCl solution was
found to be
controlled not only by the aqueous solution acidity but also the chloride ion
content. The transport of Mo(VI) was performed through a supported liquid
membrane (SLM) impregnated with 0.1 M TOMAC-10% 1-octanol in kerosene.
The Mo(VI) transport was improved by higher HCl concentration in the feed side.
Mo(VI) was effectively transported from 4 M HCl feed solution into 2 M H_2SO_4
or 1 M HCl stripping solution. The Mo(VI) recovery into the product side
increased with increasing TOMAC concentration in the SLM and reached about 95%
after 7 h with a 1 M TOMAC-SLM. Mo(VI) was concentrated into a small volume
of
product solution across an SLM containing 0.1 M TOMAC-10% 1-octanol.

L8 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2009 ACS on STN
AN 1988:134334 CAPLUS
DN 108:134334

OREF 108:22017a,22020a

TI Purification of niobium by solvent extraction

IN Niwa, Kenji; Ichikawa, Ichiro; Motone, Masaharu

PA Sumitomo Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62292619	A	19871219	JP 1986-133067	19860609
PRAI	JP 1986-133067		19860609		

AB Nb is purified after Ta extraction from crude Nb. Ta is removed by dissolving crude Nb in HF solution or inorg. acid containing HF, adjusting the resulting solution to 4N HF solution, mixing with 1.5-5.0 equivalent water-insol. quaternary NH4+ compound, and extracting Ta into the organic solvent. Nb in

the residue is extracted by mixing with 1.0-2.0 equivalent insol. quaternary organic solvent from aqueous phase. The residual impurities are successively removed by contacting the Nb-containing solution with ≥ 1 HF-containing aqueous

solution of inorg. acid, HF, and NH4+ salt. The water-insol. quaternary NH4+ compound may have general formula (R1R2R3R4N)n+ Xn- where R1, R2, R3, and R4 are aryl- or alkyl-group, total number of C is 20-30, X is a halogen, OH, NO3, CO32- or SO42- and n = 1-2. The inorg. acid and NH4+ salt may be ≥ 1 of HCl, HNO3, H2SO4, NH4F, NH4Cl, NH4NO3, and (NH4)2SO4. This method gives highly purified Nb by simple extraction and does not require reextn. and rewashing. Thus, 2 L 0.5 N HF solution containing 45.1 g Nb/L and 8.8 g Ta/L was prepared by dissolving 157.1 g crude Nb(OH)5 containing Nb 57.4, Ta 4.2, Si 1.5, Fe 0.4, Ti 0.2, Sn 0.1%, and trace amts. of Na, K, and Al was mixed with 1 L toluene solution containing 29.5 g tri-n-octylmethylammonium chloride in a 5 L extraction tank with a stirrer for 1 h and the resulting mixture was left to sep. Ta in the organic phase by extraction. The resulting

aqueous phase was mixed with 2 L toluene solution containing 285.5 g tri-n-octylmethylammonium chloride/L and the mixture was stirred for 1 h to extract Nb in the organic phase. The extracted organic solution was contacted with 2 L of

the mixture of 1 N HCl and 2N HF to extract residual impurities into acidic aqueous

solution. This process was repeated twice and the washed organic solution was adjusted to pH 8-9 with NH3 to hydrolyze Nb and precipitate Nb(OH)5. The resulting filtered residue was washed with pure water, dried, and baked at 900° for 4 h to give purified Nb2O5. The resulting Nb2O5 contained Ta 2.5, Fe 1.0 Mn <0.5, Ti <0.5, Al 1.0, Sn 1.0, Si <1, Ca <0.5, and Na 0.2% and the yield was 96.8 ppm.

L8 ANSWER 14 OF 14 CAPLUS COPYRIGHT 2009 ACS ON STN

AN 1982:188079 CAPLUS

DN 96:188079

OREF 96:30909a,30912a

TI Extraction of zirconium(IV) from sulfuric acid solutions with a high-molecular-weight quaternary ammonium compound

AU Sato, Taichi; Watanabe, Hiroshi

CS Fac. Eng., Shizuoka Univ., Hamamatsu, 432, Japan

SO Nippon Kagaku Kaishi (1982), (4), 583-9

CODEN: NKAKB8; ISSN: 0369-4577

DT Journal

LA Japanese

AB The extraction of Zr in aqueous H2SO4 solns. with trioctylmethylammonium chloride (Aliquat-336; R3R'NC1) in organic solvents was studied. The organic phases were examined by IR and NMR spectroscopies. A mechanism for the extraction by aliquat-336 is given. The hydrolyzed species (R3R'N)[ZrO(OH)(SO4)] is formed when Zr is further extracted in an organic phase.

=> s tomac1
L9 13 TOMACL

=> s l13 and nahso4
L13 NOT FOUND
The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l13 and "NaHSO4"
L13 NOT FOUND
The L-number entered could not be found. To see the definition of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> s l9 and "NaHSO4"
3983 "NAHSO4"
L10 0 L9 AND "NAHSO4"

=> s l9 and sodium hydrogen sulfate
1259506 SODIUM
1118566 HYDROGEN
580124 SULFATE
707 SODIUM HYDROGEN SULFATE
(SODIUM(W)HYDROGEN(W)SULFATE)
L11 0 L9 AND SODIUM HYDROGEN SULFATE

=> s ammonium chloride salt
442637 AMMONIUM
1258356 CHLORIDE
880153 SALT
L12 62 AMMONIUM CHLORIDE SALT
(AMMONIUM(W)CHLORIDE(W)SALT)

=> s l12 and sodium sulfate salt
1259506 SODIUM
580124 SULFATE
880153 SALT
59 SODIUM SULFATE SALT
(SODIUM(W)SULFATE(W)SALT)
L13 0 L12 AND SODIUM SULFATE SALT

=> s ammonium chloride
442637 AMMONIUM
1258356 CHLORIDE
L14 37242 AMMONIUM CHLORIDE
(AMMONIUM(W)CHLORIDE)

=> s l14 and sodium sulfate
1259506 SODIUM
580124 SULFATE
39696 SODIUM SULFATE
(SODIUM(W)SULFATE)
L15 1237 L14 AND SODIUM SULFATE

=> s 115 and ammonium sulfate
 442637 AMMONIUM
 580124 SULFATE
 40929 AMMONIUM SULFATE
 (AMMONIUM(W)SULFATE)
 L16 503 L15 AND AMMONIUM SULFATE

=> s 116 and solution
 356350 SOLUTION
 L17 23 L16 AND SOLUTION

=> d 1-23 bib abs

L17 ANSWER 1 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 2008:1251508 CAPLUS
 DN 149:452970
 TI Palladium-containing plating solution for coating porous
 stainless steel membrane
 IN Chen, Shih Chung; Kao, Yu Ling; Rei, Min Hon; Tsai, Len Tang
 PA Green Hydrotec Inc., Taiwan
 SO U.S. Pat. Appl. Publ., 15pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20080254311	A1	20081016	US 2007-960975	20071220
	CN 101285203	A	20081015	CN 2007-10097130	20070413
	EP 1983076	A2	20081022	EP 2007-123143	20071213
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR, AL, BA, HR, MK, RS				
	KR 2008092828	A	20081016	KR 2007-134107	20071220
	JP 2008261045	A	20081030	JP 2008-3930	20080111
PRAI	TW 2007-96113137	A	20070413		
	CN 2007-10097130	A	20070413		

AB A palladium-containing electroplating solution and method for providing a palladium or palladium alloy membrane on a porous metal support are provided. The subject invention uses electroplating to manufacture a palladium or palladium alloy membrane on a porous metal with a decreased preparation time and simplified preparation procedure. Moreover, the palladium or palladium alloy membrane prepared by the subject invention exhibits excellent compactness and good resistance to the hydrogen embrittlement, as well as a high applicability. The porous metal support is composed of stainless steel. The electroplating solution comprises .apprx.5 g/L to .apprx.50 g/L of palladium in palladium sulfate, .apprx.70 g/L to .apprx.150 g/L of the reactive conductive salt, .apprx.30 g/L to .apprx.70 g/L of the complexing agent, and enough buffering agent to give the electroplating solution a pH of .apprx.10 to .apprx.11. The reactive conductive salt is selected from sodium chloride, potassium chloride, sodium sulfate, ammonium sulfate, ammonium chloride, sodium thiosulfate, ammonium thiosulfate, ammonium citrate, and combinations thereof. The complexing agent is selected from boric acid phosphate salt s, hypophosphate salts, nitrate salts, tartrate salts, citrate salts, salts of ethylenediamine tetracetic acid (EDTA), and combinations thereof. The buffering agent is selected from sodium hydroxide, potassium hydroxide, ammonium hydroxide, and combinations thereof. The palladium salt is selected from palladium sulfate, palladium tetramine chloride (Pd(NH4)4Cl2), palladium ammonium chloride (Pd(NH4)2Cl4), palladium chloride, and combinations

thereof.

L17 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2008:860601 CAPLUS
DN 149:185672
TI Low-pollution trivalent chromium electroplating solution
IN Huang, Ching An; Hsu, Chun Ching; Leu, Ui Wei
PA Chang Gung University, Taiwan
SO U.S. Pat. Appl. Publ., 10pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 20080169199	A1	20080717	US 2007-654265	20070117
PRAI	US 2007-654265		20070117		

AB A trivalent chromium electroplating solution in accordance with the present invention contains at least one trivalent chromium salt for electroplating a chromium coating layer on a workpiece. By using the low toxic trivalent chromium to substitute highly toxic hexavalent chromium, an electroplating process of the present trivalent chromium electroplating solution has less pollution. The additive is a mixture of ammonium bromide, sodium bromide, and potassium bromide. The complex agent is selected from urea (carbamide), glycine (aminoacetic acid), formic acid dissol. salt s of acids, and dissol. salts of urea. The conductive salt is a mixture having at least two components selected from ammonium chloride, sodium chloride, potassium chloride, magnesium chloride, ammonium sulfate, sodium sulfate, potassium sulfate, and magnesium sulfate. He trivalent chromium salt is selected from chromium chloride, chromium sulfate, and hydrates of the foregoing components; and the trivalent chromium salt and a hydrate of the trivalent chromium salt are of 0.2-1.4 mol/L in the trivalent chromium electroplating solution. The auxiliary electrodes are made of material selected from plantized titanium mesh, titanium plate, platinum, graphite, and stainless steel.

L17 ANSWER 3 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2007:802972 CAPLUS
DN 147:504700
TI Process for transforming an ammonium chloride
solution generated by the Solvay process into ammonium sulphate.
IN Cabello Fuentes, Jose
PA Mex.
SO Mex. Pat. Appl., 21pp.
CODEN: MXXXXA3
DT Patent
LA Spanish
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	MX 2003NL00042	A	20050512	MX 2003-NL42	20031110
PRAI	MX 2003-NL42		20031110		

AB The filtered solution of ammonium chloride generated by the Solvay process into ammonium sulfate, which contains sodium chloride, sodium bicarbonate and ammonium bicarbonate. The process comprises a first stage, which consists in acidifying the solution of ammonium chloride with sulfuric acid and cooling said solution to $\leq 0^\circ$ to convert the sodium salts into carbon dioxide and sodium sulfate, the same is crystallized as a decahydrate and separated by centrifugation. The resulting solution is

treated with sulfuric acid to form ammonium acid sulfate and hydrochloride acid, which is separated by distillation. The distillation residue is a solution of ammonium acid sulfate, which is neutralized with ammonia to form ammonium sulfate. The hydrochloride acid resulting from the aforesaid process is reacted with ground limestone to form a solution of 36% calcium chloride that is free of sodium chloride and carbon dioxide; said solution is used in the Solvay process instead of carbon dioxide gas generated by limestone and coke in vertical furnaces.

L17 ANSWER 4 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2006:961262 CAPLUS
DN 145:461253

TI Prediction and correlation of osmotic coefficient and activity of water in electrolyte solution using a MSA model

AU Pazuki, G. R.; Arabgol, F.

CS Department of Biotechnology, Malek ashtar University of Technology, Tehran, Iran

SO Journal of Molecular Liquids (2006), 128(1-3), 140-144
CODEN: JMLIDT; ISSN: 0167-7322

PB Elsevier B.V

DT Journal

LA English

AB In this work, a modified mean spherical approximation (MSA) model has been used to estimate osmotic coefficient and water activity in electrolyte solns. The diams. of anion and cation are considered as linearly dependent on their densities. The results of this model show that it is suited for estimating the osmotic coefficient of electrolytes in aqueous solns. Also, water activity in electrolyte solns. was calculated by the modified MSA model. The average

absolute deviation error for estimated water activity shows the applicability of this model for estimating the water activity in aqueous solns.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 5 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2006:452856 CAPLUS
DN 145:104022

TI Dispersion copolymerization of acrylamide with quaternary ammonium cationic monomer in aqueous salts solution

AU Chen, Dongnian; Liu, Xiaoguang; Yue, Yumei; Zhang, Wende; Wang, Pixin

CS Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, Changchun, 130022, Peop. Rep. China

SO European Polymer Journal (2006), 42(6), 1284-1297
CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier Ltd.

DT Journal

LA English

AB Dispersion copolymn. of acrylamide (AM) with 2-methacryloxyethyl tri-Me ammonium chloride (DMC) has been carried out in aqueous salts solution containing ammonium sulfate and sodium chloride with poly(acryloxyethyl tri-Me ammonium chloride) (PDAC) as the stabilizer and 2,2'-azobis[2-(2-imidazolin-2-yl)propane]-dihydro chloride (VA-044) as the initiator. A new particle formation mechanism of the dispersion polymerization for the present system has been proposed. The effects of inorg. salts and stabilizer concentration on dispersion polymerization have been investigated.

The results show that varying the salt concentration could affect the morphol. and mol. weight of the resultant copolymer particles significantly. With increasing the stabilizer concentration, the particle size decreased at first and

then increased, meanwhile the effect on the copolymer mol. weight was the contrary. These results had been rationalized based on the proposed mechanism.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2005:538648 CAPLUS
DN 143:258409
TI Solution containing sodium sulfate with
radiation-shielding functions against electromagnetic wave
IN Li, Zhengsheng
PA Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, No pp. given
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	CN 1533234	A	20040929	CN 2003-113977	20030324
PRAI	CN 2003-113977		20030324		

AB The title solution contains Na sulfate decahydrate, H₂O and other salts at a weight ratio of 11-93 : 100 : 0-10. The other salts can be selected from NaCl, NaBr, KCl, (NH₄)₂SO₄, Na₂SO₃, NH₄Cl and K₂SO₄. The title solution is not frozen at 0° nor boiled at 100°. This solution has good shield performance (70 dB) against electromagnetic wave radiation, has advantages of good elec. conductivity, good transparency, no toxicity and high safety, and can be widely used in radiation-proof devices.

L17 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2004:809897 CAPLUS
DN 141:328113
TI Method for separating protein aggregate from the renatured
solution of denatured protein/inclusion body protein mixture
IN Su, Zhiguo; Li, Ming
PA Institute of Process Engineering, Chinese Academy of Sciences, Peop. Rep. China
SO Faming Zhuanli Shenqing Gongkai Shuomingshu, 9 pp.
CODEN: CNXXEV
DT Patent
LA Chinese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	CN 1410436	A	20030416	CN 2001-142300	20010927
	CN 1207304	C	20050622		
PRAI	CN 2001-142300		20010927		

AB The method comprises balancing gel filtration column with denaturing agent and salt-containing buffer, adsorbing the denatured protein/renatured inclusion body protein mixture solution on the balanced column, and eluting with the above buffer. The denaturing agent is urea, guanidine HCl, Triton, or Na dodecyl sulfate. The salt is HCl, acetate, carbonate, phosphate, or sulfate of Na⁺, K⁺, or NH₄⁺.

L17 ANSWER 8 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
AN 2004:220013 CAPLUS
DN 140:238226
TI Process for preparing sodium silicate alkali solution depleted
of sodium salt and enriched in silica
IN Sarkar, Biswanath; Thakur, Ram Mohan; Samant, Nagesh; Prabhu, Mohan

Kuvettu; Gopal, Ravichandran; Patel, Mitra Bhanu; Ray, Sanjay Kumar;
Venkatachalam, Krishnan; Makhija, Satish; Ghosh, Sobhan
PA Indian Oil Corporation Limited, India
SO U.S. Pat. Appl. Publ., 7 pp.
CODEN: USXXCO

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20040053773	A1	20040318	US 2002-282898	20021029
	US 6864202	B2	20050308		
	IN 2002MU00828	A	20040703	IN 2002-MU828	20020916
PRAI	IN 2002-MU828	A	20020916		

AB The process for obtaining sodium silicate alkali solution depleted of sodium salt and enriched in silica from a mother liquor recovered after isolation of mol. sieves and more particularly, for recycling mother liquor obtained after the isolation of mol. sieves for the preparation of fresh mol. sieves or as a binder for producing fluid catalytic cracking catalyst.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 9 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 2000:745146 CAPLUS

DN 134:238099

TI Salt effect on the phase transition behavior of poly(N-isopropylacrylamide)

AU Wang, Ming-zhen; Gao, Li-ning; Hu, Dao-dao; Fang, Yu

CS Department of Chemistry, Shanxi Normal University, Xi'an, 710062, Peop. Rep. China

SO Shaanxi Shifan Daxue Xuebao, Ziran Kexueban (2000), 28(3), 84-89

CODEN: SSDKF2

PB Shaanxi Shifan Daxue

DT Journal

LA Chinese

AB Poly(N-isopropylacrylamide) (PNIPAM) and acenaphthylene (ACE) labeled PNIPAM (PNIPAM/ACE) have been synthesized by free radical method. The salt effect on the low critical solution temperature (LCST) of PNIPAM has been systematically investigated. The LCST decreases with increasing salt concentration and the effect is not only salt concentration and salt type dependent, but

also salt nature dependent. Fluorescence anisotropy via ACE label studies revealed that addition of salt decreases the segmental mobility of the PNIPAM chain, and thereby decreases the LCST of the polymer.

L17 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1999:88932 CAPLUS

DN 130:299173

TI Influence of inorganic salts on cloud point of water solution of nonionic surfactants

AU Zhou, Lanfang; Fu, Shaobin; Xu, Yashuang; Wang, Debin

CS Jiangnan Petroleum Institute, Jingzhou, 434102, Peop. Rep. China

SO Jiangnan Shiyou Xueyuan Xuebao (1998), 20(4), 66-70

CODEN: JSXUEW; ISSN: 1000-9752

PB Jiangnan Shiyou Xueyuan Xuebao Bianjibu

DT Journal

LA Chinese

AB The effects of inorg. salts (1:1, 1:2, 1:3, and 2:1) on the cloud point of water solns. of two nonionic surfactants (Triton X-100, Triton X-305) were studied. One inorg. salt that decreased the cloud point to the maximum was set as the reference criteria; the differences in decrease of the cloud point

caused by the other salts relative to the reference criteria was regarded as the contribution of cations in the salts. The contribution rate of cations in the salts was in the following order: $\text{Cu}^{2+} > \text{Li}^{+} > \text{NH}_4^{+} > \text{K}^{+} > \text{Na}^{+} > \text{Fe}^{3+}$. Of the salts, Pb^{2+} had the maximum contribution rate of increasing the cloud point. Most of the salts decreased the cloud point of water solns. of nonionic surfactants, and only a few of them increased the cloud point; cations which first decreased and then increased the cloud point were $\text{Zn}^{2+} > \text{Al}^{3+} > \text{Mg}^{2+} > \text{Ca}^{2+}$. In general, the neg. ions of inorg. salts decreased the cloud point more than the pos. ions.

L17 ANSWER 11 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1999:55526 CAPLUS

DN 130:97597

TI Evaluation of ion interaction parameters for aqueous electrolyte solution models

AU Galleguillos, H. R.; Sereno, A. O.; Cisternas, L. A.

CS Univ. de Antofagasta, Depto. de Ingenieria Quimica, Antofagasta, Chile

SO Informacion Tecnologica (1998), 9(6), 35-49

CODEN: ITECFG; ISSN: 0716-8756

PB Centro de Informacion Tecnologica

DT Journal

LA Spanish

AB Ion interaction parameters for Pitzer, Bromley, and Kusik-Meissner models have been calculated using exptl. data of activity coeffs. of binary systems. The effects of using exptl. values of activity coeffs. instead of osmotic coeffs. for the determination of the interaction parameters were compared. The influence of concentration on the ion interaction parameters was analyzed. Values of the ion interaction parameters for 100 electrolytes, most of them at 250C, are given. For some systems, values of interaction parameters are given at other temps. The results of this work reveal that there is a better agreement between models and exptl. data when activity coefficient values were used for the evaluation of the interaction parameters. The Pitzer ion interaction parameters showed a dependence with the range of concentration used in the fitting of the exptl. data. The values of these parameters, in the three models considered in the study were temperature dependent.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 12 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1998:240073 CAPLUS

DN 128:219031

OREF 128:43369a,43372a

TI Representation of Electrolyte Solution Properties by Means of the Peng-Robinson-Stryjek-Vera Equation of State

AU Zhao, Ensheng; Lu, Benjamin C. -Y.

CS Honeywell Hi-Spec Solutions, London, ON, N6B 1V5, Can.

SO Industrial & Engineering Chemistry Research (1998), 37(5), 1619-1624

CODEN: IECRED; ISSN: 0888-5885

PB American Chemical Society

DT Journal

LA English

AB The Peng-Robinson-Stryjek-Vera equation of state (Stryjek, R.; Vera, J. H. Can. J. Chemical Engineering 1986, 64, 334-340) was used with the Wong-Sandler mixing rule (1992) and the activity coefficient model of Chen et al. (AIChE J. 1982, 28, 588-596) to calculate osmotic coeffs. and vapor-liquid equilibrium

(VLE)

values of electrolyte solns. The osmotic coeffs. calculated by this approach agree with those calculated from the original Chen model. The approach was also used to represent VLE for three ethanol-water-salt systems. The average absolute deviations of the calculated temps. were around 1 K, and those of the

calculated vapor-phase comps. were between 0.01 and 0.02 mol fraction.
 RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1995:426787 CAPLUS

DN 122:182761

OREF 122:33381a,33384a

TI Crystallization of protein from aqueous solution with water-soluble polymers

IN Nilsson, Birgitte Mahler; Laustsen, Mads Aage; Rancke-Madsen, Anders

PA Novo Nordisk A/S, Den.

SO PCT Int. Appl., 28 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9501989	A1	19950119	WO 1994-DK256	19940623
	W: AU, BB, BG, BR, BY, CA, CN, CZ, FI, HU, JP, KP, KR, KZ, LK, LV, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SK, UA, US, UZ, VN				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9471214	A	19950206	AU 1994-71214	19940623
	EP 707594	A1	19960424	EP 1994-920412	19940623
	EP 707594	B1	20011121		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	CN 1126477	A	19960710	CN 1994-192657	19940623
	CN 1054159	C	20000705		
	BR 9407047	A	19960813	BR 1994-7047	19940623
	JP 08512294	T	19961224	JP 1994-503762	19940623
	AT 209214	T	20011215	AT 1994-920412	19940623
	PT 707594	T	20020531	PT 1994-920412	19940623
	ES 2168300	T3	20020616	ES 1994-920412	19940623
	US 5728559	A	19980317	US 1995-557056	19951201
	FI 9600073	A	19960108	FI 1996-73	19960108
	FI 112949	B1	20040213		
FRAI	DK 1993-830	A	19930709		
	WO 1994-DK256	W	19940623		

AB The present invention relates to a method of separating a protein, in particular an enzyme, from an aqueous solution of proteins, comprising (a) providing an aqueous mixture of proteins with a salt concentration at or below 1.5 M, to which a water soluble polymer has been added, and (b) recovery of the protein in crystalline form. Polyethylene glycol or polypropylene glycol are the preferred water-soluble polymers. The crystallization of various enzymes by the process was demonstrated. The effect of pH and enzyme, polymer, and salt consns. on the crystallization yields were examined

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 14 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1990:189050 CAPLUS

DN 112:189050

OREF 112:31781a,31784a

TI Solution for regenerating silver offset plate

IN Yoshida, Hajime; Kamada, Tokuchi; Kainuma, Osamu

PA Nikken Chemical Laboratory Co., Ltd., Japan

SO Eur. Pat. Appl., 8 pp.

CODEN: EPXXDW
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 346048	A2	19891213	EP 1989-305661	19890605
	EP 346048	A3	19900321		
	EP 346048	B1	19930127		
	R: DE, FR, GB, IT, SE				
	JP 01310993	A	19891215	JP 1988-142577	19880609
	US 4965168	A	19901023	US 1989-361659	19890602
PRAI	JP 1988-142577	A	19880609		
OS	MARPAT 112:189050				

AB A solution for regenerating the ink receptivity of a Ag offset plate from a Ag halide photog. material by reducing the Ag oxide layer formed on the lipophilic Ag image areas comprises hydrazine 1.0-3.5 and a quaternary ammonium salt having the formula $n(NR_1R_2R_3R_4)+Xn^-$ ($R_1-4 = C_1-20$ alkyl; $X =$ an acid group; $n = 1, 2$) 3.0-20.0 weight%. The hydrazine derivative reduces

the Ag oxide layer and the quaternary ammonium salt serves as a cationic activator which enters the minute pores in the Ag image areas to lower their polarity. The solution may further contain a gelatin-reinforcing agent, an agent for improving the moisture absorption of the gelatin layer, a wetting agent, a starching agent, and an antiseptic.

L17 ANSWER 15 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 1963:466314 CAPLUS

DN 59:66314
 OREF 59:12241b-c

TI Ionic hydration in an aqueous electrolyte solution and its parameter

AU Tamura, Kiyoshi; Sasaki, Tsunetaka

CS Tokyo Metropol. Univ.

SO Bulletin of the Chemical Society of Japan (1963), 36(8), 975-80

CODEN: BCSJJA8; ISSN: 0009-2673

DT Journal

LA Unavailable

AB The molar volume of electrolytes in the solution state, the volume contraction due to dissoln. of one mole of solute, and the volume of hydration water per mole of solute were calculated. Tait's equation for water and Harned and Owen's treatment of an electrolyte solution (The Physical Chemistry of Electrolytic Solutions, 1950, 2nd Ed. (CA 44, 3346i)), together with sound velocity data, were used. Electrolytes included LiCl, LiNO₃, NaCl, NaBr, NaI, NaOH, KCl, KBr, KI, KCN, KClO₃, NH₄Cl, NH₄OAc, MgCl₂, Mg(NO₃)₂, CaCl₂, Ca(NO₃)₂, NiCl₂, CoCl₂, Co(NO₃)₂, Co(OAc)₂, BaCl₂, Ba(OH)₂, AlCl₃, Al(NO₃)₃, Na₂CO₃, Na₂SO₄, K₂CO₃, K₂SO₄, K₂Cr₂O₇, (NH₄)₂SO₄, MgSO₄, COSO₄, CuSO₄.

L17 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN
 AN 1958:111530 CAPLUS

DN 52:111530
 OREF 52:19650d-e

TI Back-extraction of uranyl nitrate from tributyl phosphate solution

AU Sato, Taichi

CS Govt. Chem. Ind. Research Inst., Tokyo

SO Journal of Inorganic and Nuclear Chemistry (1958), 7, 147-8

CODEN: JINCAO; ISSN: 0022-1902

DT Journal

LA Unavailable

AB cf. ibid. 6, 334(1958). Back-extraction of U from 19% tributyl phosphate in

kerosine with H₂SO₄, HCl, AcOH, and oxalic acid, and their NH₄ and Na salts, and NH₄ and Na carbonate solns., at 1, 5, and 10% by weight solution, and

with water, was studied. Effectiveness of back-extraction decreased in the order oxalate, carbonate, sulfate; acetate and chloride retarded back-extraction NH₄ salts are more effective than Na salts which are more effective than the acids.

L17 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1940:37943 CAPLUS

DN 34:37943

OREF 34:5727c-d

TI Hydrolysis of salts in solution

AU Brown, H. F.; Cranston, J. A.

SO Journal of the Chemical Society (1940) 578-83

CODEN: JCSOA9; ISSN: 0368-1769

DT Journal

LA Unavailable

AB cf. C. A. 31, 3765.1. The pH values of solns. of NaOAc, ZnSO₄, NaHCO₃, KCl, NH₄Cl, NH₄NO₃, (NH₄)₂SO₄, Na₂C₂O₄, K₂CrO₄, K₂Cr₂O₇, BeSO₄, NaHSO₄, Al₂(SO₄)₃, Pb(NO₃)₂, CuSO₄, CdSO₄, NH₄OAc, and KCN were determined at room temperature (about 16°) at concns. of 10-1000l. per mol. The first 8 salts were used in CO₂-free water. Comparison of the results for NaOAc and ZnSO₄ obtained without precautions to avoid atmospheric contamination with the results with CO₂-free solns. shows the importance of precautions if the pH value is within 2 or 3 units of 7.

L17 ANSWER 18 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1930:36823 CAPLUS

DN 24:36823

OREF 24:3942e-1

TI Ebullioscopic study of equilibria in aqueous solution at 100°

AU Rouyer, E.

SO Ann. chim. [10] (1930), 13, 423-91

DT Journal

LA Unavailable

AB By means of the internally elec. heated differential ebullioscope constructed with Bourion (cf. C. A. 23, 557, 2343), the mol. equilibrium of the polyphenols in aqueous solution at 100°, and the nature of their mol. association were studied. From the concentration of the solution, the weight of substance dissolved in 100 g.H₂O, and the observed ebullioscopic elevation, the equilibrium

constant between simple mols. (c) and associated mols. (c'), $K = cn/c'$, can be calcd. $K_2 = c_2/c'$ and $K_3 = c_3/c'$ are, resp., for pyrocatechol 1.04, 1.82; resorcinol 2.22, 5.31; quinol 2.24, 4.51; pyrogallol 5.56, 10.46; hydroxyhydroquinone 4.63, 11.80. Equilibrium exists between simple and double mols. at low concns. (0.5-1.75 M), and between simple and triple mols. at concns. up to 2 M. Above 2 M the conclusions are uncertain. The association count. of phloroglucinol, $K = 5.07$, is slightly lower than the usual value for normal substances. Study of total reactions at 100° also shows that temperature has no influence of the neutralization of NaOH by mono-, di- and tri-acids. The ebullioscopic method confirms the existence in solution of NaClO₄, of the neutral Na₂SO₄ only and of the 3 Na phosphates. Application of the method of ebullioscopic deviation (cf. C. A. 23, 557) to the composition of various mixts. of aqueous salt solns. at 100° shows that mixts. of solns. of MgCl₂ with KCl, NH₄Cl, NaCl or LiCl and of MgBr₂ with KBr give complexes of the type MgX₂.MX (carnallites); mixts. of MgCl₂ with CaCl₂, SrCl₂ or BaCl₂ give tachydrates (slight affinity); mixts. of (NH₄)₂SO₄ with sulfates of Mg, Zn, Fe⁺⁺, Ni, Co, Mn, Cu or Cd give

(NH₄)₂SO₄. CuCl₂ with chlorides of K, NH₄, Na or Li and CuBr₂ with bromides of K, NH₄ or Na give CuX₂MX; CuCl₂ with chlorides of Ca, Sr or Ba gives 2CuCl₂.3MCl₂: CdCl₂ with chlorides of K, NH₄ or Na gives a mixture of M₂CdCl₄ and McdCl₃ (M₂CdCl₄ predominating); CdI₂ and KI give K₂CdI₄; CdCl₂ and LiCl give CdCl₂ with chlorides of Ca, Sr, Ba, Mg or Mn gives CdCl₄.MCl₂; CdBr₂ with bromides of K or NH₄, Na or Mg gives CdBr₄-- only; CdI₂ and iodides of NH₄, Na or Sr give CdI₄--; HgCl₂ and chlorides of K, NH₄ or Na give M₂HgCl₄ (predominating) and chlorides of MHgCl₃; HgCl₂ and chlorides of Ca, Sr or Ba give MHgCl₄. The equilibrium consts. for many of these complexes were determined. The elements arranged in decreasing order of affinities are thus: K, Na, Ca, Ba, and for the halogens: 1, Br, Cl

L17 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1925:11387 CAPLUS

DN 19:11387

OREF 19:1519b-e

TI Contraction on solution of various substances in water and ethyl alcohol

AU Rakshit, Jitendra Nath

SO Zeitschrift fuer Elektrochemie und Angewandte Physikalische Chemie (1925), 31, 97-101

CODEN: ZEAPAA; ISSN: 0372-8323

DT Journal

LA Unavailable

AB cf. C. A. 17, 2808. The contraction on solution of KI, KBr, K₂Cr₂O₇, NaCl, Na₂SO₄ anhydrous NaHCO₃, NH₄Cl, (NH₄)₂C₂O₄.H₂O, CuSO₄.5H₂O, FeSO₄.(NH₄)₂SO₄.6H₂O, MgSO₄.7H₂O, C₂O₄H₂.2H₂O, NaK₄H₄O₆.4H₂O, d-tartaric acid, C₆H₈O₇.H₂O, C₆H₈O₇ (citric acid). KC103, K₄Fe(CN)₆, AcONa.3H₂O, (NH₄)₆Mo₇O₂₄.4H₂O, FeSO₄.7H₂O, (AcO)₂Co.4H₂O, (AcO)₂Mn.4H₂O, (AcO)₂UO₂.3H₂O, Pb(NO₃)₂, Al₂(SO₄)₃.K₂SO₄.24H₂O and tannin in water was measured at various concns. Contraction = (volume of solute + volume of solvent)-volume of resulting solution The contraction increases with concentration in

all cases except (AcO)₂Pb, alum, citric acid anhydrous and hydrated, and Pb(NO₃)₂, where the reverse obtains. In Pb(NO₃)₂ it passes through a min. Anhydrous citric acid, d-tartaric acid and tannin exhibit the same phenomena in EtOH as in H₂O. The first 15 compds. listed were used without further purification, the others were twice recrystd. R. assumes that the solvent and solute form compds. similar to crystallized hydrates. This association is at a min. in saturated solns. and increases with dilution until the mols. of the solute decompose by hydrolysis or ionization. Contraction on solution increases with increase in association between the mols. of the solute and the solvent and simultaneously decreases as the solute mols. dissociate upon dilution

L17 ANSWER 20 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1906:252908 CAPLUS

DN 0:252908

TI Effect of calcium sulfate on some alkali halide. [machine translation]

AU Ditte, A.

SO Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences (1898), 135, 694-700

From: Chem. Zentr., 1898, I, 981-982

CODEN: COREAF; ISSN: 0001-4036

DT Journal

LA Unavailable

AB [Machine Translation of Descriptors]. If one brings potassium sulfate and calcium chloride into a solution of potassium chloride, then does not occur excluding the formation of calcium sulfate. Rather thin needles of the double salt CaSO₄.K₂SO₄.4H₂O form. The more sulfates in the solution, all the smaller is the content of calcium is

present. A solution of 120 g potassium chloride in the liter contains with 24° apart from 24.6 g SO₃ 0.3 g CaO and apart from 2.5 g SO₃ 7.3 g CaO. If one brings gypsum in the surplus in concentrated solutions of calcium chloride, then the needles of the double salt form likewise, and the solution takes up more lime than sulfuric acid. Up to contents of 24 g in the liter only gypsum goes into solution; with larger concentrations at potassium chloride the quantity of the lime in the comparison to sulfuric acid, to with 360 g potassium chloride in the liter rises with 21° the solution contains 1.0 g SO₃ on 10.6 g CaO. It takes place thus a conversion of calcium sulfate with potassium chloride under formation of potassium sulfate and calcium chloride; a part potassium sulfate forms the little soluble double salt with the gypsum. Similarly calcium sulfate in solutions of potassium bromide and potassium iodide reacts. If one brings gypsum in the surplus in solutions of ammonium chloride, then the solution takes up equivalent quantities of lime and sulfuric acid, which rise with the ammonium chloride content, until the solution with 60 g ammonium chloride in the liter with 24° 3.3 g CaO and 4.7 g SO₃ contains. With higher concentrations of the ammonium chloride the quantity of the dissolved lime outweighs those the sulfuric acid. With 333 g ammonium chloride in the liter contains the solution of 4.9 g SO₃ and 4.4 g CaO, with the SO₃-content only 3.4 g CaO corresponds. The author means that an equilibrium between the two sulfates and the two chlorides exists here. The formation of a double sulfate of ammonium and calcium cannot be considered, since such can exist only in very concentrated solutions of ammonium sulfate. How however otherwise the surplus of the dissolve lime is to be explained is not indicated; an elimination one of pure ammonium sulfate is not mentioned and is also extremity improbable. Similarly as in solutions of potassium chloride reacts gypsum in sodium chloride-solutions; also here however no double sulfate can excrete according to author's assumption. In addition, it one does not indicate here, how a surplus of calcium can arrive into the solution, without sodium sulfate separates itself purely or as double sulfate. The very close lying interpretation of the observations due to the law of the mass effect and the dissociation theory is not tried by the author. One refers to for the explanation of the features only the heats of reaction during the conversion of alkali sulfates with calcium chloride. Concentrated solutions of chloro-alkali processes do not drain the gypsum. Reversed burned gypsum in potassium chloride solutions solidifies far more rapidly, than in pure water; less rapidly it solidifies in solutions of sodium chloride.

L17 ANSWER 21 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1906:158927 CAPLUS

DN 0:158927

TI Hydrolysis of ammonium salts. [machine translation]

AU Naumann, Alex.; Ruecker, Adolf

CS Giessen. Univ.-Lab.

SO Journal fuer Praktische Chemie (Leipzig) (1906), 74(2), 249-75

From: Chem. Zentr., 1906, II, 1634-1635

CODEN: JPCEAO

DT Journal

LA Unavailable

AB [Machine Translation of Descriptors]. For this 4 boards. After the leading report, the described experimental procedures for the hydrolysis of a whole number of ammonium salts was examined with the boiling point of their aqueous solutions. The results of the investigation are represented in tables and graphical, and find utilization for the computation of ammonia s the according equation free existing in the distilled

solution by hydrolysis: $s = a1:q1$, where $a1$ the contents of ammonia is taken from 1 ccm for the distillates of the volume meant and from the diagrams, during $q1$, which it is quotient ammonia content of the distillate of the distilled solution, 0.04 graphically interpolated for a ammoniacal distill, with which the distillate volume is 1 ccm, on the average = . If C means the concentration of the distilled solution at NH_3 , then the strength of the hydrolysis is in per cent of the NH_3 -content of the distilled solution = $a1 \cdot 100 / 0.04 \cdot C$. In the following, this latter value is indicated and before it in each case for the examined ammonium salts the normal content of the associated solution at ammonia: 1. Ammonium chloride, NH_4Cl : 4-normal 0.0198, 2-normal 0.03, 4/5-normal 0.0479. 2. Ammonium bromide, NH_4Br : 2-normal 0.028, 4/5-normal 0.0467. 3. Ammonium sulfocyanate, NH_4CNS : 4-normal 0.0208. 4. Ammonium sodium sulfate, $NH_4NaSO_4 \cdot 3H_2O$: 1-normal 0.24, 1/4-normal 0.40. 5. Ammonium sulfate, $(NH_4)_2SO_4$: 2-normal 0.191, 1-normal 0.23, 2/5-normal 0.342, 1/4-normal 0.398, 1/5-normal 0.413, 1/8-normal 0.463, 1/40-normal 0.588. 6. Ammonium chromate, $(NH_4)_2CrO_4$: 1-normal 31.00, 2/5-normal 32.60, 1/10-normal 36.81, 1/40-normal 42.20, 1/4-00-normal 49.00. 7. Ammonium dichromate, $(NH_4)_2Cr_2O_7$: 1-normal 0.0108. 8. Ammonium oxalate, $(NH_4)_2C_2O_4$: 2-normal 2.20, 1/4-normal 2.68, 1/10-normal 3.44, 1/40-normal 4.52. 9. Blackamoor salt, $(NH_4)_2SO_4 \cdot FeSO_4 \cdot 6H_2O$: 1-normal 0.0317. 10. Phosphorus salt, $(NH_4)_4H_2PO_4 \cdot 4H_2O$: 1-normal 31.00, 1/2-normal 35.61, 1/4-normal 41.11, 1/10-normal 50.17, 1/50-normal 70.00, 1/500-normal 79.40. 11. Mono-ammonium phosphate, $(NH_4)H_2PO_4$: 1-normal 0.0476. 12. Diammonium phosphate, $(NH_4)_2HPO_4$: 2-normal 8.00, 1/2-normal 11.61, 1/5-normal 14.68, 1/25-normal 20.34, 1/250-normal 22.43. 13. Triammonium phosphate, $(NH_4)_3PO_4$: 3/4-normal 14.00, 3/10-normal 17.53, 3/50-normal 23.57, 3/500-normal 25.40. 14. Ammoniummolybdate, $(NH_4)_6Mo_7O_{24} \cdot 4H_2O$: 3/5-normal 0.20. From the solution of iron ammonia alum, $(NH_4)_3Fe(SO_4)_2 \cdot 12H_2O$, no provable quantities of NH_3 escaped from $2SO_4$, $Fe_2(SO_4)_3$. The developing ferric sulfate is very strongly hydrolytic split, so that the NH_3 holds the formed acid. According to the method of the authors, hydrolysis values are found as maximum, because they are calculated from a relatively still substantial distillate quantity, then also, because from ammonium salt solutions the NH_3 escapes more easily than from purely aqueous solutions, and because the dissociations voltage particularly increases the quantity of the over-distilling NH_3 with the chloride and bromide. The fact that the dissociations voltage is not the only motivation to the formation free NH_3 comes out however from the fact that the salt of the H_2SO_4 in the distillate arranges larger NH_3 -concentration than the salt of the stronger HCl . With increasing temperature, the hydrolysis increases considerably with NH_4 -salts. Also, with increasing dilution, the hydrolysis increases; but the increase does not follow strong monobasic acid, except with the salts of the HCl and HBr , the mass action law in the OSTWALD form $x_2:(nx) = K$. The distillation of pure NH_3 -solutions shows that between concentration of the solution and partial pressure of the NH_3 no proportionality exists. The partial pressure of the NH_3 takes-off with accelerated increasing dilution. For analytic practice it results that ammonia is to be particularly titrated into diluted solution not with H_2SO_4 , but only with HCl , because the noticeable hydrolysis of the ammonium sulfate causes a too early occurring of the acid reaction.

AU Mazzotto, D.
SO Rend. Reale Ist. Lombardo, 23(2), 565-633
From: J. Chem. Soc., Abstr. 60, 388-9 1891
DT Journal
LA Unavailable
AB Also abstracted in Chemical Centr., 1890, ii, 779. The author's investigations include the determination of the freezing points of saturated solutions of the chlorides, nitrates, and sulphates of potassium, sodium, and ammonium, and of the temperatures at which the so-called cryohydrates separate. The temperatures were determined by means of mercurial, alcoholic, and air thermometers, the last of which was one specially constructed by the author. The lowest temperature employed (-31.4°) was obtained by a mixture of sodium chloride and ammonium nitrate, or sodium nitrate and ammonium chloride. The temperature at which a cryohydrate of two salts was precipitated, was always lower than the freezing point of the saturated solution of either separately, and was approximately equal to the sum of the depression of the freezing points of the individual salts. In mixtures of two salts which contain different acids and bases, only those are capable of forming a saturated solution which contain that salt, which, of the four formed from the combination of both acids and bases under the existing conditions of the experiment, is the least soluble. The others are unstable, that is, they exchange their radicles during cooling. The author's experiments support Nernst's statements (Abstract, 1890, 3) on the mutual influences of the solubility of salts.

L17 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2009 ACS on STN

AN 1906:64096 CAPLUS

DN 0:64096

TI Metal-ammonia compounds in aqueous solution. Part II. The absorptive powers of dilute solutions of salts of the alkali metals

AU Dawson, H. M.; McCrae, J.

CS The Yorkshire College, Leeds, Leeds

SO Journal of the Chemical Society, Transactions (1901), 79, 493-511
CODEN: JCHTA3; ISSN: 0368-1645

DT Journal

LA Unavailable

AB The effect of the addition of sodium sulfate to ammoniacal copper sulfate solutions was studied to determine the influence of an increase in the concentration of one of the electrolytic dissociation products of cupri-ammonia sulfate. Experiments were conducted to determine the effect of sodium sulfate alone on the distribution of ammonia between water and chloroform, and it was found that this, although small, was appreciable. A series of experiments with solutions of various alkali salts was performed to determine whether the solubility of ammonia in water is influenced in the same manner as is the solubility of nitrous oxide and of hydrogen by the addition of electrolytes. In the case of solutions of salts of the alkali metals, it may be assumed as a working basis that no appreciable formation of an additive compounds with ammonia takes place, in which case the only influence of the dissolved salt will be that resulting from what may be called the physical action.